



Day : Wednesday  
Date: 12/12/2007  
Time: 23:18:36

## Inventor Name Search

Enter the **first few letters** of the Inventor's Last Name.  
Additionally, enter the **first few letters** of the Inventor's First name.

**Last Name**

**First Name**

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(FILE 'HOME' ENTERED AT 23:14:58 ON 12 DEC 2007)

FILE 'CAPLUS, MEDLINE, USPATFULL, BIOSIS' ENTERED AT 23:15:13 ON 12 DEC 2007

L1 4140 S DIKETOPIPERAZINE  
L2 789189 S INSULIN  
L3 52 S L2 (S) L1  
L4 16 S L3 (S) (MICROPARTICLE OR MICROCAPSULE OR PARTICLE OR COMPLEX  
L5 2 S L4 NOT PD>20000629  
L6 2 DUP REM L5 (0 DUPLICATES REMOVED)

=> d que L4

L1 4140 SEA DIKETOPIPERAZINE  
L2 789189 SEA INSULIN  
L3 52 SEA L2 (S) L1  
L4 16 SEA L3 (S) (MICROPARTICLE OR MICROCAPSULE OR PARTICLE OR  
COMPLEX)

L6 ANSWER 1 OF 2 USPATFULL on STN

TI Method for making self-assembling diketopiperazine drug delivery system  
AB Drug delivery systems have been developed based on the formation of diketopiperazine (or analogs) microparticles. In the preferred embodiment the microparticle is stable at low pH and disintegrates at physiological pH, and is particularly useful for oral drug delivery. In other embodiments, the microparticles are stable at high pH and disintegrate at neutral or basic pH, or are stable at neutral pH and disintegrate at high or low pH. In the most preferred embodiment the microparticles are formed in the presence of the drug to be delivered, for example, insulin, felbamate, calcitonin or heparin. The diketopiperazine synthetic intermediates are preferably formed by cyclodimerization to form diketopiperazine derivatives at elevated temperatures under dehydrating conditions, functionalized on the side chains, and then precipitated with drug to be incorporated into microparticles.

ACCESSION NUMBER: 96:26965 USPATFULL

TITLE: Method for making self-assembling diketopiperazine drug delivery system

INVENTOR(S): Steiner, Solomon S., Mount Kisco, NY, United States  
Rhodes, Christopher A., Stamford, CT, United States  
Shen, Gregory S., Hartsdale, NY, United States  
McCabe, R. Tyler, Yorktown, NY, United States

PATENT ASSIGNEE(S): Pharmaceutical Discovery Corporation, Elmsford, NY,  
United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5503852		19960402
APPLICATION INFO.:	US 1994-299842		19940901 (8)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1992-849186, filed on 11 Mar 1992, now patented, Pat. No. US 5352461		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Page, Thurman K.		
ASSISTANT EXAMINER:	Benston, Jr., William E.		
LEGAL REPRESENTATIVE:	Arnall Golden & Gregory		
NUMBER OF CLAIMS:	28		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	10 Drawing Figure(s); 5 Drawing Page(s)		
LINE COUNT:	1377		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 2 USPATFULL on STN

TI Self assembling diketopiperazine drug delivery system  
AB Drug delivery systems have been developed based on the formation of diketopiperazine (or analogs) microparticles. In the preferred embodiment the microparticle is stable at low pH and disintegrates at physiological pH, and is particularly useful for oral drug delivery. In the most preferred embodiment the microparticles are formed in the presence of the drug to be delivered, for example, insulin or heparin. The diketopiperazine synthetic intermediates are preferably formed by cyclodimerization to form diketopiperazine derivatives at elevated conditions under dehydrating conditions, then precipitated with drug to be incorporated into microparticles.

ACCESSION NUMBER: 94:86193 USPATFULL

TITLE: Self assembling diketopiperazine drug delivery system

INVENTOR(S): Feldstein, Robert, Pelham, NY, United States  
Glass, John, Shoreham, NY, United States  
Steiner, Solomon S., Mt. Kisco, NY, United States

PATENT ASSIGNEE(S): Pharmaceutical Discovery Corporation, Elmsford, NY,  
United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5352461		19941004
APPLICATION INFO.:	US 1992-849186		19920311 (7)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Page, Thurman K.		
ASSISTANT EXAMINER:	Benston, W.		
LEGAL REPRESENTATIVE:	Kilpatrick & Cody		
NUMBER OF CLAIMS:	20		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	5 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	640		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

## Refine Search

### Search Results -

Terms	Documents
L23 not L22	0

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L24

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Wednesday, December 12, 2007

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**Set**  
**Name Query**  
 side by  
 side

**Hit**  
**Count**  
**Set**  
**Name**  
**result**  
**set**

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

L24	L23 not l22	0	L24
L23	L20 NOT (L12 or L13)	2	L23
L22	L21 NOT (L12 or L13)	8	L22
L21	L18 and @ad<20000929	18	L21
L20	L19 and @ad<20000929	8	L20
L19	L16 and ((complex\$6 or encapsul\$8 or physisor\$8 or adsor\$8) same insulin)	25	L19
L18	L17 and ((complex\$6 or encapsul\$8 or physisor\$8 or adsor\$8) same insulin)	51	L18
L17	L15 and L14	225	L17
L16	L15 same L14	35	L16
L15	diketopiperazine	1772	L15
L14	insulin	96744	L14

DB=PGPB,USPT; PLUR=YES; OP=OR

L13	L12 NOT l11	2	L13
L12	L10 and @ad<20000929	10	L12
L11	L10 and @ad<19990629	8	L11

<u>L10</u>	L9 and ((complex\$6 or encapsul\$8 or physisor\$8 or adsor\$8) same insulin)	25	<u>L10</u>
<u>L9</u>	L8 and insulin	65	<u>L9</u>
<u>L8</u>	L7 and (diketopiperazine)	91	<u>L8</u>
<u>L7</u>	(424/489 or 514/3 or 514/252.12).ccls.	6712	<u>L7</u>
<u>L6</u>	((Joseph near Sulner) AND @pd>20060510) AND @pd>20070129	1	<u>L6</u>
<u>L5</u>	((Rodney near Woods) AND @pd>20060510) AND @pd>20070129	0	<u>L5</u>
<u>L4</u>	((solomon near Steiner) AND @pd>20060510) AND @pd>20070129	7	<u>L4</u>
<u>L3</u>	L2 and (diketopiperazine)	4	<u>L3</u>
<u>L2</u>	L1 AND INSULIN	60	<u>L2</u>
	(20030064097 or 20030068378 or 20030194420 or 20040096403 or 20040151774 or 20040157928 or 20040182387 or 20040247628 or 20050080000 or 20050153874 or 20050214251 or 20070086952 or 3906950 or 3921637 or 4153689 or 4196196 or 4211769 or 4272398 or 4294829 or 4659696 or 4861627 or 4886051 or 5006343 or 5042975 or 5145684 or 5188837 or 5204108 or 5260306 or 5354562 or 5364838 or 5458135 or 5482927 or 5484606 or 5492112 or 5514646 or 5562909 or 5577497 or 5653961 or 5658878 or 5693338 or 5740794 or 5747445 or 5763396 or 5785049 or 5785989 or 5807315 or 5849322 or 5874064 or 5877174 or 5901703 or 5912011 or 5929027 or 5946828 or 5952008 or 5985309 or 5997848 or 6051256 or 6063910 or 6099517 or 6153613 or 6254854 or 6294204 or 6395774 or 6423344 or 6432383 or 6436443 or 6440463 or 6447753 or 6503480 or 6518239 or 6582728 or 6592904 or 6635283 or 6676931 or 6685967 or 6737045 or 6949258 or 7030084 or RE35862 or RE37053).PN.	80	<u>L1</u>

END OF SEARCH HISTORY